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EXAMINER	
WHITTINGTON, KENNETH	

ART UNIT	PAPER NUMBER
2862	

NOTIFICATION DATE	DELIVERY MODE
12/10/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/530,485	FRACHON ET AL.	
	Examiner	Art Unit	
	KENNETH J. WHITTINGTON	2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *34* is/are allowed.

6)☒ Claim(s) *18-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 September 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The Amendment filed September 19, 2008 has been entered and considered. In view thereof, the objections to the Drawings have been withdrawn.

Claim Objections

Claims 18-33 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

As noted in MPEP Section 608.01(n)(III), product-by-process claims can be a proper claim unless it is conceivable that the product can be made by another method than the process claim. In claims 18-33, the product claims can be made according to different processes not requiring the particulars of the method of claim 34, i.e., not requiring the coordinate modification steps and the repeating phases, and still provide a target having the same structural features as required in claims 18-33. Examples of such transducers with such targets are disclosed or taught by the cited prior art which is discussed below in the rejections. Accordingly, because the transducer can conceivably be made by other methods/processes, these dependent product-by-process claims are improper.

To overcome this objection, evidence must be provided to establish an unobvious difference between the claimed product and the prior art products.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Initially, it is noted that claims 18-33 are product by process claims. Accordingly, any prior art apparatus or combination thereto that reads on the product discloses or teaches the features of the product by process claims, notwithstanding the recited process steps. See MPEP2113.

Claims 18, 19, 23, 24, 26, 27 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Dilger et al. (US5670876), hereinafter Dilger. Regarding claim 18 (note structural limitations herein are incorporated from claim 34), Dilger discloses a position transducer configured to determine a variation in position of a target made by a method, including:

a target made of a ferromagnetic material (See Dilger FIGS. 1-5, item 20);

at least one magnet, the target and the at least one magnet defining between one another an air gap (See FIGS. 1-5, items 32 and 34);

a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the at least one magnet (See FIGS. 1-5, item 36),

wherein the at least one magnet is magnetized along a direction substantially perpendicular to a front surface of the at least one magnet bounding one edge of the air gap, the at least one magnet having a cavity opening on the front surface of the at least

one magnet, the magnetosensitive element being seated in the cavity, the target having a geometric configuration such that the variation of induction as a function of the position of the target corresponds to a predefined function (See FIGS. 1-5, note magnetization of magnet, structure and orientation of sensor in cavity between magnet).

Regarding the recited method steps of claim 34, since Dilger discloses the recited product limitations, it discloses the process steps for making thereof.

Regarding claim 19, Dilger discloses the target is translationally mobile along an axis perpendicular to an axis of magnetization of the at least one magnet (See FIGS. 1-5, note target 20 and magnet items 32 and 34 and note displacement direction 24 of target).

Regarding claim 23, Dilger discloses the plane of the displacement of the target takes place is included in a plane passing through the center of the magnetosensitive element (See FIGS. 1-7, note position of sensor 36 and target 20).

Regarding claim 24, Dilger discloses a ferromagnetic piece adhesively bonded to the back of the at least one magnet (See FIGS. 1-5, note item 42).

Regarding claim 26, Dilger discloses the target having a particular shape configured to deliver a linear induction as a function of the displacement of the target (See FIGS. 1-5, note direction and orientation and col. 5, lines 12-32).

Regarding claim 27, Dilger discloses the magnetosensitive element is placed in the cavity in a zone of minimal induction (See FIGS. 6 and 7).

Regarding claim 31, Dilger discloses the target having a shape to generate a variation of thickness of the air gap that is function of position relative to the target (See FIGS. 1-7).

Claims 18, 20, 23-25, 31 and 32 (alsoare rejected under 35 U.S.C. 102(b) as being anticipated by Hattori et al. (US4424705), hereinafter Hattori.

Regarding claim 18 (note structural limitations herein are incorporated from claim 34), Hattori discloses:

a target made of a ferromagnetic material (See Hattori FIG. 4, item 12);

at least one magnet, the target and the magnet defining between one another an air gap (See FIG. 4, item 13);

a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the at least one magnet(See FIG. 4, item 17),

wherein the at least one magnet is magnetized along a direction substantially perpendicular to a front surface of the at least one magnet bounding one edge of the air gap, the at least one magnet having a cavity opening on the front surface of the magnet, the magnetosensitive element being seated in the cavity, the target having a geometric configuration such that the variation of induction as a function of the position of the target corresponds to a predefined function (See FIG. 4, note magnetization of magnet, structure and orientation of sensor in cavity between magnet).

Regarding the recited process steps, since Hattori discloses the recited product limitations, it discloses the process steps for making thereof.

Regarding claim 20, Hattori discloses the target translationally mobile along an axis parallel to an axis of magnetization of the at least one magnet (See FIG. 4).

Regarding claim 23, Hattori discloses the plane of the displacement of the target takes place is included in a plane passing through the center of the magnetosensitive element (See FIG. 4, note structure).

Regarding claim 24, Hattori discloses a ferromagnetic piece adhesively bonded to the back of the at least one magnet (See FIG. 4, item 14).

Regarding claim 25, Hattori discloses the at least one magnet adhesively bonded to a T-shaped ferromagnetic piece (See FIG. 4, items 14 and 16).

Regarding claim 31, Hattori discloses the target having a shape to generate a variation of thickness of the air gap that is function of position relative to the target (See FIG. 4 and disclosure related thereto).

Regarding claim 32, Hattori discloses the at least one magnet and the magnetosensitive element are disposed opposite a ferromagnetic membrane configured to be deformed under effect of a force applied vertically to a membrane (See FIG. 4 and disclosure related thereto).

Claims 18, 21 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Carr et al. (US4745363), hereinafter Carr.

Regarding claim 18 (note structural limitations herein are incorporated from claim 34), Carr discloses:

a target made of a ferromagnetic material (See Carr FIGS. 1-4, wheel with teeth 16, 18, 20);

at least one magnet, the target and the at least one magnet defining between one another an air gap (See FIGS. 1-4, item 10);

a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the at least one magnet (See FIGS. 1-4, item 14),

wherein the at least one magnet is magnetized along a direction substantially perpendicular to a front surface of the at least one magnet bounding one edge of the air gap, the at least one magnet having a cavity opening on the front surface of the magnet, the magnetosensitive element being seated in the cavity, the target having a geometric configuration such that the variation of induction as a function of the position of the target corresponds to a predefined function (See FIGS. 1-4, note magnetization of magnet, structure and orientation of sensor in cavity between magnet).

Regarding the recited process steps, since Carr discloses the recited product limitations, it discloses the process steps for making thereof.

Regarding claim 21, Carr discloses the target is rotationally mobile around a shaft perpendicular to an axis of magnetization of the at least one magnet (See FIGS. 1-4).

Regarding claim 33, Carr discloses the recited analog position sensor of claim 21 (See above).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 18, 21 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woyton (US3916326) in view of Jansseune (US6043646). Regarding these claims (note structural limitations herein are incorporated from claim 34), Woyton teaches:

a target made of a ferromagnetic material, the target comprising three spiral teeth and having a measurable angular travel of 360 degrees (See Woyton FIG. 1, item 14);

a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the at least one magnet (See FIGS. 1-4, item 14),

wherein the target has a geometric configuration such that the variation of induction as a function of the position of the target corresponds to a predefined function (See FIG. 1, note structure and orientation of target and sensor).

However, Woyton does not teach the recited sensor/magnet arrangement. Jansseune teaches a sensor arrangement for detecting the passing of a ferromagnetic passing part comprising at least one magnet, the target and magnet defining an air gap, the at least one magnet is magnetized in a direction perpendicular to a front surface of

the at least one magnet towards the air gap, the direction being perpendicular to the movement of the target, the at least one magnet having a cavity with a magnetosensitive sensor seated therein (See Jansseune FIG. 1, note magnet, sensor and orientation in relation to moving part). It would have been obvious at the time the invention was made to incorporate the sensor arrangement of Jansseune into the apparatus of Woyton. One having ordinary skill in the art would have been motivated to do so because such are equivalent sensors for measuring passing of a magnetic part and the sensor of Jansseune provides a sensor that is simply constructed and easy to produce and to provide more magnetic flux through the sensors during the passing of the target teeth (See Jansseune col. 1, lines 37-40 and col. 2, lines 11-36).

Regarding the recited process steps, since Woyton in view of Jansseune teaches the recited product limitations, it discloses the process steps for making thereof.

Claims 18, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDearmon et al. (US20040017190), hereinafter McDearmon, in view of Jansseune.

Regarding claim 18 (note structural limitations herein are incorporated from claim 34), McDearmon teaches a position transducer configured to determine a variation in position of a target made by a method, including:

a target made of a ferromagnetic material (See McDearmon FIGS. 1-5, item 4);

at least one magnet, the target and the at least one magnet defining between one another an air gap (See FIGS. 1-5, item 5 and see paragraph 0022 for back biased magnetic sensors);

a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the at least one magnet (See FIGS. 1-5, item 5),

wherein the at least one magnet is magnetized along a direction substantially perpendicular to a front surface of the at least one magnet bounding one edge of the air gap (See paragraph 0022, note back biased magnetic sensors directed field through sensor), the target having a geometric configuration such that the variation of induction as a function of the position of the target corresponds to a predefined function (See FIGS. 1-5, note item 4).

However, McDearmon does not explicitly teach the magnet having a cavity for the sensors. Jansseune teaches a sensor arrangement for detecting the passing of a ferromagnetic passing part comprising at least one magnet, the target and magnet defining an air gap, the at least one magnet is magnetized in a direction perpendicular to a front surface of the at least one magnet towards the air gap, the direction being perpendicular to the movement of the target, the at least one magnet having a cavity with a magneto-sensitive sensor seated therein (See Jansseune FIG. 1, note magnet, sensor and orientation in relation to moving part). It would have been obvious at the time the invention was made to incorporate the sensor arrangement of Jansseune into the apparatus of McDearmon. One having ordinary skill in the art would have been

motivated to do so because such are equivalent sensors for measuring passing of a magnetic part and the sensor of Jansseune provides a sensor that is simply constructed and easy to produce and to provide more magnetic flux through the sensors during the passing of the target teeth (See Jansseune col. 1, lines 37-40 and col. 2, lines 11-36).

Regarding the recited process steps, since McDearmon in view of Jansseune teaches the recited product limitations, it discloses the process steps for making thereof.

Regarding claim 21, this combination teaches the target is rotationally mobile around a shaft perpendicular to an axis of magnetization of the at least one magnet (See McDearmon FIGS. 1-5, note rotational sensor arrangements).

Regarding claim 22, this combination teaches the target is rotationally mobile around a shaft parallel to an axis of magnetization of the at least one magnet (See McDearmon FIG. 3, note orientation of sensor).

Allowable Subject Matter

Claim 34 is allowed. It is allowed for those reasons outlined in the Final Office Action mailed December 17, 2007.

Response to Arguments

No arguments were made in response to the outstanding rejection.

In the Interview conducted on September 4, 2008, it was initially agreed that amending product by process claims 18-33 to depend from method of making claim 34 would overcome the outstanding rejections. However, after further review of the case

law and rules regarding product by process claims, the product by process claims 18-33 do not overcome the prior art without further evidence of unobvious differences between those structures recited in the product by process claims and the prior art.

Because the Amendment filed September 19, 2008 was in response to the noted interview wherein claims 18-33 were erroneously indicated allowable, this action is non-final.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH J. WHITTINGTON whose telephone number is (571)272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Kenneth J Whittington/
Primary Examiner, Art Unit 2862

kjw